Introduction

In this assignment you will begin working on your final project for this class while continuing to practice your web programming and D3 skills. Please note that your web pages will be shared and discussed in class. For this assignment you will also reflect on your own biases and tell two different stories about your data. You are encouraged to use the bar chart code from class as a guide.

You each proposed a topic of importance to you that is related to justice, equity, and community. You also found data sets of interest related to your topic. Based on your interests you have been assigned a partner. You will complete the following assignment with your partner.

Reflection

Everyone has their own biases. You and your data have a story to tell and as you craft your projects your own biases about the project will show. One of the goals of this assignment is to encourage you to reflect on your own biases and on how they may manipulate your visualizations. In this assignment you are encouraged to let your biases manipulate your visualizations to see the effects! You will also be required to reflect on how your biases manipulated your visualizations and to discuss the ethics of these decisions. I understand and appreciate that expressing some of these opinions may be uncomfortable. You are welcome to chose an uncontroversial question related to your topic. I encourage you to come to office hours or schedule an appointment if you would like to discuss your question and plans for visualization.

Overview

In this exercise you will:

1. Work with your assigned partner.
2. Look at your data sets and determine which variables could be used to display a bar chart. This will usually be interval or ratio data on one axis and nominal or ordinal data on the other axis. Some interval or ratio data can be converted into ordinal data by binning it.
3. Define a question that you have about your data that a bar chart may help answer. For example, if you were looking at a chart of the average temperature for each month

of the year, a bar chart could easily answer, "Which month was the hottest?" Your question does not need to be complicated, but it should be of interest to you.

4. Read the article, *The Ethics of Data Visualization* that is linked on the course Moodle page.

5. Before you begin coding, reflect on your own biases as done during class. Questions that my guide your reflection include: What do you expect to see in the data? What do you want to see in the data? What story do you want to tell about the data? Could you manipulate the visualization to better tell your story? *Should* you manipulate the visualization to better tell your story?

6. Build two bar charts, using D3, to help answer your question. One bar chart should emphasize your biases to tell your story. The second bar chart should de-emphasize your biases. You may use an unethical data visualization technique but you must discuss the implications of this decision in your write-up.

7. Build a web page to guide a reader through looking at your bar charts. See additional guidelines below.

8. Upload your web page to Davidson Domains.

Web Page Criteria

You will build a web page that resembles a news article including the following:

- A catchy headline
- Your two bar chart visualizations
- An explanation introducing your question
- Information about the data including where it came from
- The argument to help answer your question that is clearly supported by and connected to your visualization
- A discussion about the two different stories your bar charts are telling including an explanation of any unethical visualization techniques that you applied

The underlying structure of your web page should also be clearly organized. Here is an example organization.

- body
  - h1 (heading tag)
  - p (paragraph about the question being asked)
  - svg (the bar chart)
  - p (paragraph explaining how the bar chart is helping to answer the question)
  - svg (the second bar chart)
  - p (paragraph explaining the unethical design choice and how it affected the visualization)

Grading Criteria

1 point Clear title at the top of the page that catches the attention of the reader

3 points Explanation of, and problem you are attempting to answer

1. Unclear and not well defined question, may not relate to the presented data
2. Question open to interpretation, or not obviously supported by the data
3. Clearly defined question that is related to the data

12 points Bar Charts

1. There is a critical issue with the chart or the data displayed on the chart.
2. The bar chart is missing an essential piece (color, axes, incorrect data types)
3. Bar chart that displays appropriate data. It uses color to catch the eye without being obnoxious. The axes are clearly labeled.

12 points Code clarity and quality.

1. Code does not work as intended or does not compile.
2. Code is repetitive or inefficient. Code may be hard to read, or is incorrect.
3. Code is missing one of the following: correct, clean, readable, elegant, documented, and non-repetitive. The page may be unorganized.
4. Code is correct, clean, readable, elegant, documented, and non-repetitive. The web page is well organized and structured.

12 points Supporting argument tied to visualization

1. Unclear and not well explanation of question, may not relate to the bar chart.
2. Argument is open to interpretation, or obvious. The argument lacks follow-on comments that could be related to what was learned. From the example above, don't limit the discussion to "July is the hottest month." Discuss this in relation to other months or to information that is known beyond just looking at the chart. Write-up may include numerous grammatical or spelling errors.
3. Clearly answered question with additional insight. Insight may be limited or non-engaging. Write-up may include minor grammatical or spelling errors that detract from readability. Discussion of bias in visualization is minimal or ethics are not considered.
4. Clearly answered question that is related to the data with insightful commentary. Discussion proposes follow-on questions related to the data that cannot yet be answered with the current visualization. Discussion of how the two visualizations emphasize how bias can affect design decisions. Write-up has been proof-read and does not contain grammatical or spelling errors.

Submission

One partner will submit for the pair.

1. Log into Davidson Domains
2. Navigate to the Dashboard
3. Select "Domains"
4. Create a New Domain for this course named "CSC 362"
5. Go to the "Document Root". You should see a file manger setup.
6. Create a folder named "Bar Chart" and upload your bar chart html file and your data files.
7. From the "Domains" page, select your domain for this class.
8. You should now see the file structure you created from the file manger. Navigate to your bar chart html file and make sure it opens and loads correctly.
9. Upload the link to your domain through for the assignment on the class moodle page.